

### REMARKS

Claims 1, 6-11, 19, and 20 are pending in the application. Claims 2-5 and 12-18 have been cancelled without prejudice. Claims 1, 6, and 11 have been amended. Support for the amendments can be found in the specification at, e.g., page 5, lines 23-31. These amendments add no new matter.

#### Priority

On page 2 of the Office Action, the Examiner requested that applicants update the current status of the priority applications of the present application. Applicants have amended page 1 of the specification to add the number of the patent that has issued from the parent of the present application.

#### Claim Objections

Claim 18 has been cancelled, thereby obviating the objection to this claim on page 2 of the Office Action.

#### 35 U.S.C. §112, second paragraph (Indefiniteness)

At pages 2-3 of the Office Action, claims 12-18 were rejected as allegedly indefinite. These claims have been cancelled, thereby obviating the rejection

#### 35 U.S.C. §103(a) (Obviousness)

At pages 3-4 of the Office Action, claims 1-11, 19, and 20 were rejected as allegedly unpatentable over Choo et al. (1989) J. Virol. 63(2):782-89 ("Choo"). According to the Office Action,

Choo et al characterized and disclosed a 26 amino acids long portion of the E7 protein of human papillomavirus type 16 (HPV-16) which is 100% identical to the now claimed invention SEQ ID NO:16 (see the abstract, and Figure 12). This only differs since the claimed invention is directed to smaller protein fragment within Choo's et al teaching. One of ordinary skill in the art at the time of filing,

however, would have been highly motivated by the above cited art to slightly modify the short polypeptide as taught by Choo et al to be utilized as an immunogenic composition to induce an immune response in a suitable host. The skill level in this art is rather high and it would have been within purview of a skilled artisan to slightly modify the disclosed protein by substituting an amino acids from either ends of protein of Figure 12 without changing its core character or its functionality principles. The skilled artisan having access to the above cited art would not have anticipated any unexpected results, as none have been provided. The core structure of immunogenic product as now claimed is for all intense and purposes the same as taught by Choo et al. Therefore, the invention as a whole is prima facie obvious absent unexpected results.

Applicants respectfully traverse the rejection in view of the following comments.

Independent claims 1 and 6 are directed to substantially pure peptides that are less than 19 amino acids in length and comprise the amino sequence of SEQ ID NO:16 (claim 1) or SEQ ID NO:21 (claim 6). Independent claim 11 is directed to a peptide consisting of the amino acid sequence of SEQ ID NO:20.

Choo describes the detection of human papillomavirus (HPV) DNA in cervical carcinoma cell lines. Fig. 12 of Choo depicts the results of nucleotide sequence analysis on a fragment of HPV DNA. This DNA fragment was prepared by Choo to assess the presence of base changes in the HPV DNA. Fig. 12 also contains predicted translations of partial coding regions (contained within the sequenced DNA fragment) for the E7 and E1 proteins. Choo nowhere describes the preparation of peptides corresponding to these predicted translations, much less the use of those peptides to induce an immune response. Because Choo does not describe the suitability of the predicted coding regions for inducing an immune response, the skilled person would have had no reason to make modifications to the predicted peptides of Fig. 12. In particular, Choo would not have provided the skilled person with the requisite suggestion or motivation to construct the peptides of independent claims 1, 6, or 11.

In view of the foregoing comments, applicants respectfully submit that Choo does not render obvious the peptides of independent claims 1, 6, or 11 or the claims that depend therefrom.

Applicant : Robert G. Urban et al.  
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At pages 4-5 of the Office Action, claims 12-18 were rejected as allegedly unpatentable over Choo and Urban et al., WO 94/04557. Claims 12-18 have been cancelled, thereby obviating the present rejection.

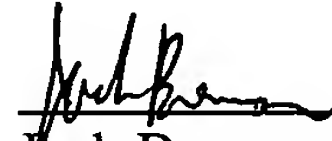
### CONCLUSIONS

Applicants submit that all grounds for rejection have been overcome, and that all claims are in condition for allowance, which action is requested.

Enclosed is a Petition for Three Month Extension of Time and a check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 08191-004004.

Respectfully submitted,

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